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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/628,234 | 07/29/2003 | Masayoshi Yagyu | H&A-120 | 4759 |

7590 04/01/2005
Mattingly, Stanger & Malur, P.C.
Suite 370
1800 Diagonal Road
Alexandria, VA 22314

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| EXAMINER |
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JONES, STEPHEN E

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| ART UNIT | PAPER NUMBER |
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2817

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 10/628,234 | Applicant(s) YAGYU ET AL. | |
| | Examiner Stephen E. Jones | Art Unit 2817 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-6, and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Sturdivant et al. (of record).

Sturdivant (Fig. 4) teaches an interconnect including: first and second coplanar transmission lines on respective dielectric substrates joined by a via conductor through a hole near an end surface of the transmission line structure (Claim 5); and a conductor coats the ends and outer surfaces of the substrates (Claims 1, 3); the distance between the end surface of the transmission line structure and the conductor of the end surface are in the same location thus the distance is less than $\frac{1}{4}$ wavelength (claim 2); the two signal lines electrically contact each other through the via (Claim 6); and the conductor coating the end of the structure is perpendicular to the signal line and the ground conductors are connected together (Claim 8); and by the definition of an interconnect, devices are connected together by the interconnect structure. Also, regarding Claim 9, the phrase "such as" does not require the related limitations and is only considered as an example.

3. Claims 1, 3-5, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirabayashi (of record).

Hirabayashi (Figs. 1 and 6) teaches a filter including: a connection structure having a transmission line (16) on a dielectric plate and another transmission line (stripline resonator transmission lines) (15) on another dielectric plate layer (Claim 5); the lines are connected together by a via hole (Claim 4); a conductor is disposed covering the end surface near the via connections (Claim 1); the ground is disposed on both plates (Claim 3); and the conductor on the end surface is perpendicular to the line (15) (Claim 8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sturdivant et al. in view of Kennedy et al. (both of record).

Sturdivant teaches an interconnect as described above. However, Sturdivant does not teach that the first transmission line carries the device and wiring.

Kennedy provides the general teaching of an interconnect including a device and wiring included on a substrate layer of the interconnect.

It would have been considered obvious to one of ordinary skill in the art to have included the device being interconnected in the Sturdivant structure to be on the transmission line substrate (such as taught by Kennedy), because it would have provided the advantageous benefit of a simplified device by reducing the number of mounting substrates required (i.e. otherwise the device would require a separate/additional mounting substrate), thereby suggesting the obviousness of such a modification.

Response to Arguments

7. Applicant's arguments filed 3/17/05 have been fully considered but they are not persuasive.

Applicant argues that the end surfaces of the substrate of Sturdivant are shown being exposed rather than being covered with a conductor.

Applicant's argument that the end surfaces are exposed is not convincing, especially since Sturdivant clearly shows a conductive portion around the cross-hatched area (i.e. the nonconductive area) in Fig. 4 (e.g. see item 60 which surrounds the cross-hatched area including the end surface around where line item 56 is shown).

Furthermore, the substrates are also covered in their entire opposite surfaces (including the ends) from the transmission line sides.

Also, regarding the Hirabayashi rejections, Applicant argues that the end surface near the via connections is shown by the arrow 13(1) but the examiner refers to the end surfaces 16(1) and 16(2) as the end surfaces.

Applicant's argument is not convincing, especially since nothing in the present claim language precludes the end surfaces 16(1) and 16(2) from being considered the end surfaces.

Also, it should be noted that Applicant's present claim language includes that the transmission lines comprise the dielectric plates as well as the wiring patterns, thus the rejections are indeed consistent with the present claim language.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

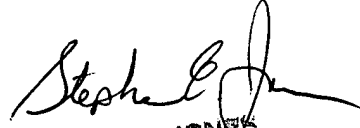
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


STEPHEN E. JONES
PRIMARY EXAMINER

SEJ